

SEQUENCE LISTING

<110> Corrado FOGHER
 <120> Food flours with specific technological characteristics and low allergenicity
 <130> 4161-12 / BX1898R
 <140> US 10/534,742
 <141> 2005-05-12
 <150> PCT/IB2003/005092
 <151> 2003-11-12
 <150> IT BO2002A000714
 <151> 2002-11-13
 <160> 44
 <170> MS Word
 <210> 1
 <211> 830
 <212> PRT
 <213> Wheat
 <400> 1

Met	Thr	Lys	Arg	Leu	Val	Leu	Phe	Ala	Ala	Val	Val	Val	Ala	Leu	Val	1	5	10	15
Ala	Leu	Thr	Ala	Ala	Glu	Gly	Glu	Ala	Ser	Gly	Gln	Leu	Gln	Cys	Glu	20	25	30	
Arg	Glu	Leu	Gln	Glu	His	Ser	Leu	Lys	Ala	Cys	Arg	Gln	Val	Val	Asp	35	40	45	
Gln	Gln	Leu	Arg	Asp	Val	Ser	Pro	Glu	Cys	Gln	Pro	Val	Gly	Gly	Gly	50	55	60	
Pro	Val	Ala	Arg	Gln	Tyr	Glu	Gln	Gln	Val	Val	Val	Pro	Pro	Lys	Gly	65	70	75	80
Gly	Ser	Phe	Tyr	Pro	Gly	Glu	Thr	Thr	Pro	Pro	Gln	Gln	Leu	Gln	Gln	85	90	95	
Ser	Ile	Leu	Trp	Gly	Ile	Pro	Ala	Leu	Leu	Arg	Arg	Tyr	Tyr	Leu	Ser	100	105	110	
Val	Thr	Ser	Pro	Gln	Gln	Val	Ser	Tyr	Tyr	Pro	Gly	Gln	Ala	Ser	Ser	115	120	125	
Gln	Arg	Pro	Gly	Gln	Gly	Gln	Gln	Pro	Gly	Gln	Gly	Gln	Gln	Glu	Tyr	130	135	140	

Tyr Leu Thr Ser Pro Gln Gln Ser Gly Gln Trp Gln Gln Pro Gly Gln
 145 150 155 160
 Gly Gln Ala Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Glu
 165 170 175
 Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Trp Gln Pro Glu Gln Leu Gln
 180 185 190
 Gln Pro Thr Gln Gly Gln Gln Arg Gln Gln Pro Gly Gln Gly Gln Gln
 195 200 205
 Leu Arg Gln Gly Gln Gln Gly Gln Gln Ser Gly Gln Gly Gln Pro Arg
 210 215 220
 Tyr Tyr Pro Thr Ser Ser Gln Gln Pro Gly Gln Leu Gln Gln Leu Ala
 225 230 235 240
 Gln Gly Gln Gln Gly Gln Gln Pro Glu Arg Gly Gln Gln Gly Gln Gln
 245 250 255
 Ser Gly Gln Gly Gln Gln Leu Gly Gln Gly Gln Gln Gly Gln Gln Pro
 260 265 270
 Gly Gln Lys Gln Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Ile
 275 280 285
 Ser Pro Gln Gln Leu Gly Gln Gly Gln Gln Ser Gly Gln Gly Gln Leu
 290 295 300
 Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln Ser Gly
 305 310 315 320
 Tyr Tyr Pro Thr Ser Ala Gln Gln Pro Gly Gln Leu Gln Gln Ser Thr
 325 330 335
 Gln Glu Gln Gln Leu Gly Gln Glu Gln Gln Asp Gln Gln Ser Gly Gln
 340 345 350
 Gly Arg Gln Gly Gln Gln Ser Gly Gln Arg Gln Gln Asp Gln Gln Ser
 355 360 365
 Gly Gln Gly Gln Gln Pro Gly Gln Arg Gln Pro Gly Tyr Tyr Ser Thr
 370 375 380
 Ser Pro Gln Gln Leu Gly Gln Gly Gln Pro Arg Tyr Tyr Pro Thr Ser
 385 390 395 400
 Pro Gln Gln Pro Gly Gln Glu Gln Gln Pro Arg Gln Leu Gln Gln Pro
 405 410 415
 Glu Gln Gly Gln Gln Gly Gln Gln Pro Glu Gln Gly Gln Gln Gly Gln
 420 425 430
 Gln Pro Gly Gln Gly Glu Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln
 435 440 445

Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro
 450 455 460
 Gln Gln Ser Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln
 465 470 475 480
 Gln Ser Gly Gln Leu Gln Gln Pro Ala Gln Gly Gln Gln Pro Gly Gln
 485 490 495
 Glu Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro
 500 505 510
 Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr
 515 520 525
 Ser Pro Gln Gln Ser Gly Gln Glu Gln Gln Leu Glu Gln Trp Gln Gln
 530 535 540
 Ser Gly Gln Gly Gln Pro Gly His Tyr Pro Thr Ser Pro Leu Gln Pro
 545 550 555 560
 Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ile Gly
 565 570 575
 Gln Gly Gln Gln Pro Gly Gln Leu Gln Gln Pro Thr Gln Gly Gln Gln
 580 585 590
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 595 600 605
 Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln
 610 615 620
 Pro Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Ser Gly Gln Gly Gln Gln
 625 630 635 640
 Pro Gly Gln Trp Gln Gln Pro Gly Gln Gly Leu Pro Gly Tyr Tyr Pro
 645 650 655
 Thr Ser Ser Leu Gln Pro Glu Gln Gly Gln Gln Gly Tyr Tyr Pro Thr
 660 665 670
 Ser Gln Gln Gln Pro Gly Gln Gly Pro Gln Pro Gly Gln Trp Gln Gln
 675 680 685
 Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser
 690 695 700
 Gly Gln Gly Gln Gln Pro Gly Gln Trp Leu Gln Pro Gly Gln Trp Leu
 705 710 715 720
 Gln Ser Gly Tyr Tyr Leu Thr Ser Pro Gln Gln Leu Gly Gln Gly Gln
 725 730 735
 Gln Pro Arg Gln Trp Leu Gln Pro Arg Gln Gly Gln Gln Gly Tyr Tyr
 740 745 750

Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln Gln Leu Gly Gln Gly
755 760 765

Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln
770 775 780

Gln Gly Tyr Asp Ser Pro Tyr His Val Ser Ala Glu His Gln Ala Ala
785 790 795 800

Ser Leu Lys Val Ala Lys Ala Gln Gln Leu Ala Ala Gln Leu Pro Ala
805 810 815

Met Cys Arg Leu Glu Gly Gly Asp Ala Leu Leu Ala Ser Gln
820 825 830

<210> 2
<211> 815
<212> PRT
<213> Wheat

<400> 2

Met Thr Lys Arg Leu Val Leu Phe Ala Ala Val Val Val Ala Leu Val
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Ala Leu Thr Ala Ala Glu Gly Glu Ala Ser Gly Gln Leu Gln Cys Glu
20 25 30

Arg Glu Leu Gln Glu His Ser Leu Lys Ala Cys Arg Gln Val Val Asp
35 40 45

Gln Gln Leu Arg Asp Val Ser Pro Glu Cys Gln Pro Val Gly Gly Gly
50 55 60

Pro Val Ala Arg Gln Tyr Glu Gln Gln Val Val Val Pro Pro Lys Gly
65 70 75 80

Gly Ser Phe Tyr Pro Gly Glu Thr Thr Pro Pro Gln Gln Leu Gln Gln
85 90 95

Ser Ile Leu Trp Gly Ile Pro Ala Leu Leu Arg Arg Tyr Tyr Leu Ser
100 105 110

Val Thr Ser Pro Gln Gln Val Ser Tyr Tyr Pro Gly Gln Ala Ser Ser
115 120 125

Gln Arg Pro Gly Gln Gly Gln Gln Glu Tyr Tyr Leu Thr Ser Pro Gln
130 135 140

Gln Ser Gly Gln Trp Gln Gln Pro Gly Gln Gly Gln Ser Gly Tyr Tyr
145 150 155 160

Pro Thr Ser Pro Gln Gln Ser Gly Gln Lys Gln Pro Gly Tyr Tyr Pro
165 170 175

Thr Ser Pro Trp Gln Pro Glu Gln Leu Gln Gln Pro Thr Gln Gly Gln
 180 185 190
 Gln Arg Gln Gln Pro Gly Gln Gly Gln Gln Leu Arg Gln Gly Gln Gln
 195 200 205
 Gly Gln Gln Ser Gly Gln Gly Gln Pro Arg Tyr Tyr Pro Thr Ser Ser
 210 215 220
 Gln Gln Pro Gly Gln Leu Gln Gln Leu Ala Gln Gly Gln Gln Gly Gln
 225 230 235 240
 Gln Pro Glu Arg Gly Gln Gln Gly Gln Gln Ser Gly Gln Gly Gln Gln
 245 250 255
 Leu Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Lys Gln Gln Ser
 260 265 270
 Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Ile Ser Pro Gln Gln Leu Gly
 275 280 285
 Gln Gly Gln Gln Ser Gly Gln Gly Gln Leu Gly Tyr Tyr Pro Thr Ser
 290 295 300
 Pro Gln Gln Ser Gly Gln Gly Gln Ser Gly Tyr Tyr Pro Thr Ser Ala
 305 310 315 320
 Gln Gln Pro Gly Gln Leu Gln Gln Ser Thr Gln Glu Gln Gln Leu Gly
 325 330 335
 Gln Glu Gln Gln Asp Gln Gln Ser Gly Gln Gly Arg Gln Gly Gln Gln
 340 345 350
 Ser Gly Gln Arg Gln Gln Asp Gln Gln Ser Gly Gln Gly Gln Gln Pro
 355 360 365
 Gly Gln Arg Gln Pro Gly Tyr Tyr Ser Thr Ser Pro Gln Gln Leu Gly
 370 375 380
 Gln Gly Gln Pro Arg Tyr Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln
 385 390 395 400
 Glu Gln Gln Pro Arg Gln Leu Gln Gln Pro Glu Gln Gly Gln Gln Gly
 405 410 415
 Gln Gln Pro Glu Gln Gly Gln Gln Gly Gln Gln Gln Arg Gln Gly Glu
 420 425 430
 Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln
 435 440 445
 Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly
 450 455 460
 Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Leu Gln
 465 470 475 480

Gln Pro Ala Gln Gly Gln Gln Pro Gly Gln Glu Gln Gln Gly Gln Gln
 485 490 495
 Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro
 500 505 510
 Thr Ser Pro Gln Gln Ser Gly Gln Glu Gln Gln Leu Glu Gln Trp Gln
 515 520 525
 Gln Ser Gly Gln Gly Gln Pro Gly His Tyr Pro Thr Ser Pro Leu Gln
 530 535 540
 Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ile
 545 550 555 560
 Gly Gln Gly Gln Gln Pro Gly Gln Leu Gln Gln Pro Thr Gln Gly Gln
 565 570 575
 Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Glu
 580 585 590
 Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly
 595 600 605
 Gln Pro Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Ser Gly Gln Gly Gln
 610 615 620
 Gln Pro Gly Gln Trp Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr
 625 630 635 640
 Pro Thr Ser Ser Leu Gln Pro Glu Gln Gly Gln Gln Gly Tyr Tyr Pro
 645 650 655
 Thr Ser Gln Gln Gln Pro Gly Gln Gly Pro Gln Pro Gly Gln Trp Gln
 660 665 670
 Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln
 675 680 685
 Ser Gly Gln Gly Gln Gln Pro Gly Gln Trp Leu Gln Pro Gly Gln Trp
 690 695 700
 Leu Gln Ser Gly Tyr Tyr Leu Thr Ser Pro Gln Gln Leu Gly Gln Gly
 705 710 715 720
 Gln Gln Pro Arg Gln Trp Leu Gln Pro Arg Gln Gly Gln Gln Gly Tyr
 725 730 735
 Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln Gln Leu Gly Gln
 740 745 750
 Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly
 755 760 765
 Gln Gln Gly Tyr Asp Ser Pro Tyr His Val Ser Ala Glu His Gln Ala
 770 775 780

Ala Ser Leu Lys Val Ala Lys Ala Gln Gln Leu Ala Ala Gln Leu Pro
785 790 795 800

Ala Met Cys Arg Leu Glu Gly Gly Asp Ala Leu Leu Ala Ser Gln
805 810 815

<210> 3
<211> 839
<212> PRT
<213> Wheat

<400> 3

Met Ala Lys Arg Leu Val Leu Phe Val Ala Val Val Val Ala Leu Val
1 5 10 15

Ala Leu Thr Val Ala Glu Gly Glu Ala Ser Glu Gln Leu Gln Cys Glu
20 25 30

Arg Glu Leu Gln Glu Leu Gln Glu Arg Glu Leu Lys Ala Cys Gln Gln
35 40 45

Val Met Asp Gln Gln Leu Arg Asp Ile Ser Pro Glu Cys His Pro Val
50 55 60

Val Val Ser Pro Val Ala Gly Gln Tyr Glu Gln Gln Ile Val Val Pro
65 70 75 80

Pro Lys Gly Gly Ser Phe Tyr Pro Gly Glu Thr Thr Pro Pro Gln Gln
85 90 95

Leu Gln Gln Arg Ile Phe Trp Gly Ile Pro Ala Leu Leu Lys Arg Tyr
100 105 110

Tyr Pro Ser Val Thr Cys Pro Gln Gln Val Ser Tyr Tyr Pro Gly Gln
115 120 125

Ala Ser Pro Gln Arg Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln
130 135 140

Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln Trp Gln Gln
145 150 155 160

Pro Glu Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Pro
165 170 175

Gly Gln Leu Gln Gln Pro Ala Gln Gly Gln Gln Pro Gly Gln Gly Gln
180 185 190

Gln Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser
195 200 205

Ser Gln Leu Gln Pro Gly Gln Leu Gln Gln Pro Ala Gln Gly Gln Gln
210 215 220

Gly Gln Gln Pro Gly Gln Ala Gln Gln Gly Gln Gln Pro Gly Gln Gly
225 230 235 240

Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln
 245 250 255
 Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Leu Gly Gln Gly Gln Gln
 260 265 270
 Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Ser Gly Gln Gly Gln Pro Gly
 275 280 285
 Tyr Tyr Pro Thr Ser Leu Gln Gln Leu Gly Gln Gly Gln Ser Gly Tyr
 290 295 300
 Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln
 305 310 315 320
 Leu Gln Gln Pro Ala Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly
 325 330 335
 Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln
 340 345 350
 Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln Gln
 355 360 365
 Ser Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Ser Gln Gln Pro
 370 375 380
 Thr Gln Ser Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Val Gly
 385 390 395 400
 Gln Gly Gln Gln Ala Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln
 405 410 415
 Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly
 420 425 430
 Gln Pro Gly Tyr Tyr Leu Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln
 435 440 445
 Gln Pro Gly Gln Leu Gln Gln Ser Ala Gln Gly Gln Lys Gly Gln Gln
 450 455 460
 Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro
 465 470 475 480
 Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr
 485 490 495
 Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln Gln Pro Gly Gln
 500 505 510
 Trp Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro
 515 520 525
 Leu Gln Pro Gly Gln Gly Gln Pro Gly Tyr Asp Pro Thr Ser Pro Gln
 530 535 540

Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Leu Gln Gln Pro Ala Gln
 545 550 555 560
 Gly Gln Gln Gly Gln Gln Leu Ala Gln Gly Gln Gln Gly Gln Gln Pro
 565 570 575
 Ala Gln Val Gln Gln Gly Gln Gln Pro Ala Gln Gly Gln Gln Gly Gln
 580 585 590
 Gln Leu Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln
 595 600 605
 Gly Gln Gln Pro Ala Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly
 610 615 620
 Gln His Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly
 625 630 635 640
 Gln Gly Gln Gln Pro Gly Gln Gly Gln Pro Trp Tyr Tyr Pro Thr Ser
 645 650 655
 Pro Gln Glu Ser Gly Gln Gly Gln Gln Pro Gly Gln Trp Gln Gln Pro
 660 665 670
 Gly Gln Gly Gln Pro Gly Tyr Tyr Leu Thr Phe Ser Val Ala Ala Arg
 675 680 685
 Thr Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln
 690 695 700
 Gly Gln Gln Pro Gly Gln Trp Gln Gln Ser Gly Gln Gly Gln His Trp
 705 710 715 720
 Tyr Tyr Pro Thr Ser Pro Lys Leu Ser Gly Gln Gly Gln Arg Pro Gly
 725 730 735
 Gln Trp Leu Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser
 740 745 750
 Pro Gln Gln Pro Pro Gln Gly Gln Gln Leu Gly Gln Trp Leu Gln Pro
 755 760 765
 Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Thr Gly
 770 775 780
 Gln Gly Gln Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Ser Ser Tyr
 785 790 795 800
 His Val Ser Val Glu His Gln Ala Ala Ser Leu Lys Val Ala Lys Ala
 805 810 815
 Gln Gln Leu Ala Ala Gln Leu Pro Ala Met Cys Arg Leu Glu Gly Gly
 820 825 830
 Asp Ala Leu Ser Ala Ser Gln
 835

<400> 4

Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln
245 250 255

Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Leu
 260 265 270
 Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Ser Gly
 275 280 285
 Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Leu Gly Gln
 290 295 300
 Gly Gln Ser Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln Gly
 305 310 315 320
 Gln Gln Pro Gly Gln Leu Gln Gln Pro Ala Gln Gly Gln Gln Pro Glu
 325 330 335
 Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln
 340 345 350
 Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro
 355 360 365
 Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr
 370 375 380
 Ser Ser Gln Gln Pro Thr Gln Ser Gln Gln Pro Gly Gln Gly Gln Gln
 385 390 395 400
 Gly Gln Gln Val Gly Gln Gly Gln Gln Ala Gln Gln Pro Gly Gln Gly
 405 410 415
 Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Leu
 420 425 430
 Gln Ser Gly Gln Gly Gln Pro Gly Tyr Tyr Leu Thr Ser Pro Gln Gln
 435 440 445
 Ser Gly Gln Gly Gln Gln Pro Gly Gln Leu Gln Gln Ser Ala Gln Gly
 450 455 460
 Gln Lys Gly Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln
 465 470 475 480
 Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln
 485 490 495
 Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly
 500 505 510
 Gln Gln Pro Gly Gln Trp Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr
 515 520 525
 Tyr Pro Thr Ser Pro Leu Gln Pro Gly Gln Gly Gln Pro Gly Tyr Asp
 530 535 540
 Pro Thr Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Leu
 545 550 555 560

Gln Gln Pro Ala Gln Gly Gln Gln Gly Gln Gln Leu Ala Gln Gly Gln
 565 570 575
 Gln Gly Gln Gln Pro Ala Gln Val Gln Gln Gly Gln Gln Pro Ala Gln
 580 585 590
 Gly Gln Gln Gly Gln Gln Leu Gly Gln Gly Gln Gln Gly Gln Gln Pro
 595 600 605
 Gly Gln Gly Gln Gln Pro Ala Gln Gly Gln Gln Gly Gln Gln Pro Gly
 610 615 620
 Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln
 625 630 635 640
 Gly Gln Pro Trp Tyr Tyr Pro Thr Ser Pro Gln Glu Ser Gly Gln Gly
 645 650 655
 Gln Gln Pro Gly Gln Trp Gln Gln Pro Gly Gln Trp Gln Gln Pro Gly
 660 665 670
 Gln Gly Gln Pro Gly Tyr Tyr Leu Thr Ser Pro Leu Gln Leu Gly Gln
 675 680 685
 Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln Gly
 690 695 700
 Gln Gln Pro Gly Gln Trp Gln Gln Ser Gly Gln Gly Gln His Gly Tyr
 705 710 715 720
 Tyr Pro Thr Ser Pro Gln Leu Ser Gly Gln Gly Gln Arg Pro Gly Gln
 725 730 735
 Trp Leu Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro
 740 745 750
 Gln Gln Ser Gly Gln Gly Gln Gln Leu Gly Gln Trp Leu Gln Pro Gly
 755 760 765
 Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Thr Gly Gln
 770 775 780
 Gly Gln Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Ser Ser Tyr His
 785 790 795 800
 Val Ser Val Glu His Gln Ala Ala Ser Leu Lys Val Ala Lys Ala Gln
 805 810 815
 Gln Leu Ala Ala Gln Leu Pro Ala Met Cys Arg Leu Glu Gly Gly Asp
 820 825 830
 Ala Leu Ser Ala Ser Gln
 835

<210> 5
 <211> 789

<212> PRT
 <213> Wheat

<400> 5

Met	Ala	Lys	Arg	Leu	Val	Leu	Phe	Ala	Ala	Val	Val	Val	Ala	Leu	Val	1	5	10	15
Ala	Leu	Thr	Ala	Ala	Glu	Gly	Glu	Ala	Ser	Gly	Gln	Leu	Gln	Cys	Glu	20	25	30	
His	Glu	Leu	Glu	Ala	Cys	Gln	Gln	Val	Val	Asp	Gln	Gln	Leu	Arg	Asp	35	40	45	
Val	Ser	Pro	Gly	Cys	Arg	Pro	Ile	Thr	Val	Ser	Pro	Gly	Thr	Arg	Gln	50	55	60	
Tyr	Glu	Gln	Gln	Pro	Val	Val	Pro	Ser	Lys	Ala	Gly	Ser	Phe	Tyr	Pro	65	70	75	80
Ser	Glu	Thr	Thr	Pro	Ser	Gln	Gln	Leu	Gln	Gln	Met	Ile	Phe	Trp	Gly	85	90	95	
Ile	Pro	Ala	Leu	Leu	Arg	Arg	Tyr	Tyr	Pro	Ser	Val	Thr	Ser	Ser	Gln	100	105	110	
Gln	Gly	Ser	Tyr	Tyr	Pro	Gly	Gln	Ala	Ser	Pro	Gln	Gln	Ser	Gly	Gln	115	120	125	
Gly	Gln	Gln	Pro	Gly	Gln	Glu	Gln	Gln	Pro	Gly	Gln	Gly	Gln	Gln	Asp	130	135	140	
Gln	Gln	Pro	Gly	Gln	Arg	Gln	Gln	Gly	Tyr	Tyr	Pro	Thr	Ser	Pro	Gln	145	150	155	160
Gln	Pro	Gly	Gln	Gly	Gln	Gln	Leu	Gly	Gln	Gly	Gln	Pro	Gly	Tyr	Tyr	165	170	175	
Pro	Thr	Ser	Gln	Gln	Pro	Gly	Gln	Lys	Gln	Gln	Ala	Gly	Gln	Gly	Gln	180	185	190	
Gln	Ser	Gly	Gln	Gly	Gln	Gln	Gly	Tyr	Tyr	Pro	Thr	Ser	Pro	Gln	Gln	195	200	205	
Ser	Gly	Gln	Gly	Gln	Gln	Pro	Gly	Gln	Gly	Gln	Pro	Gly	Tyr	Tyr	Pro	210	215	220	
Thr	Ser	Pro	Gln	Gln	Ser	Gly	Gln	Trp	Gln	Gln	Pro	Gly	Gln	Gly	Gln	225	230	235	240
Gln	Pro	Gly	Gln	Gly	Gln	Gln	Ser	Gly	Gln	Gly	Gln	Gln	Gly	Gln	Gln	245	250	255	
Pro	Gly	Gln	Gly	Gln	Arg	Pro	Gly	Gln	Gly	Gln	Gln	Gly	Tyr	Tyr	Pro	260	265	270	

Ile Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Ser Gly Gln Gly Gln
275 280 285
Pro Gly Tyr Tyr Pro Thr Ser Leu Arg Gln Pro Gly Gln Trp Gln Gln
290 295 300
Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro
305 310 315 320
Gly Gln Gly Gln Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr
325 330 335
Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Leu Gly Gln Gly Gln Pro
340 345 350
Gly Tyr Tyr Pro Thr Ser Gln Gln Ser Glu Gln Gly Gln Gln Pro Gly
355 360 365
Gln Gly Lys Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser
370 375 380
Pro Gln Gln Ser Gly Gln Gly Gln Gln Leu Gly Gln Gly Gln Pro Gly
385 390 395 400
Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln Gln Ser Gly
405 410 415
Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln
420 425 430
Gly Gln Gln Pro Gly Gln Gly Gln Ser Gly Tyr Phe Pro Thr Ser Arg
435 440 445
Gln Gln Ser Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Ser Gly
450 455 460
Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Ala Tyr Tyr
465 470 475 480
Pro Thr Ser Ser Gln Gln Ser Arg Gln Arg Gln Gln Ala Gly Gln Trp
485 490 495
Gln Arg Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln
500 505 510
Gln Pro Gly Gln Glu Gln Gln Ser Gly Gln Ala Gln Gln Ser Gly Gln
515 520 525
Trp Gln Leu Val Tyr Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln Leu
530 535 540
Gln Gln Pro Ala Gln Gly Gln Gln Pro Ala Gln Gly Gln Gln Ser Ala
545 550 555 560
Gln Glu Gln Gln Pro Gly Gln Ala Gln Gln Ser Gly Gln Trp Gln Leu
565 570 575

Val Tyr Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln Leu Gln Gln Pro
 580 585 590
 Ala Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly
 595 600 605
 Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln
 610 615 620
 Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly
 625 630 635 640
 Gln Gln Pro Gly Gln Gly Gln Gln Pro Arg Gln Gly Gln Gln Gly Tyr
 645 650 655
 Tyr Pro Ile Ser Pro Gln Gln Ser Gly Gln Gly Gln Gln Pro Gly Gln
 660 665 670
 Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly
 675 680 685
 Gln Gln Pro Gly His Glu Gln Gln Pro Gly Gln Trp Leu Gln Pro Gly
 690 695 700
 Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Ser Gln Gln Ser Gly Gln
 705 710 715 720
 Gly His Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu
 725 730 735
 Trp Gln Pro Gly Gln Gly Gln Gln Gly Tyr Ala Ser Pro Tyr His Val
 740 745 750
 Ser Ala Glu Tyr Gln Ala Ala Arg Leu Lys Val Ala Lys Ala Gln Gln
 755 760 765
 Leu Ala Ala Gln Leu Pro Ala Met Cys Arg Leu Glu Gly Ser Asp Ala
 770 775 780
 Leu Ser Thr Arg Gln
 785

<210> 6
 <211> 660
 <212> PRT
 <213> Wheat

<400> 6

Met Ala Lys Arg Leu Val Leu Phe Ala Ala Val Val Ile Ala Leu Val
 1 5 10 15
 Ala Leu Thr Thr Ala Glu Gly Glu Ala Ser Arg Gln Leu Gln Cys Glu
 20 25 30

Arg Glu Leu Gln Glu Ser Ser Leu Glu Ala Cys Arg Gln Val Val Asp
 35 40 45
 Gln Gln Leu Ala Gly Arg Leu Pro Trp Ser Thr Gly Leu Gln Met Arg
 50 55 60
 Cys Cys Gln Gln Leu Arg Asp Val Ser Ala Lys Cys Arg Ser Val Ala
 65 70 75 80
 Val Ser Gln Val Ala Arg Gln Tyr Glu Gln Thr Val Val Pro Pro Lys
 85 90 95
 Gly Gly Ser Phe Tyr Pro Gly Glu Thr Thr Pro Leu Gln Gln Leu Gln
 100 105 110
 Gln Gly Ile Phe Trp Gly Thr Ser Ser Gln Thr Val Gln Gly Tyr Tyr
 115 120 125
 Pro Ser Val Thr Ser Pro Arg Gln Gly Ser Tyr Tyr Pro Gly Gln Ala
 130 135 140
 Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Lys Trp Gln Glu
 145 150 155 160
 Pro Gly Gln Gly Gln Gln Trp Tyr Tyr Pro Thr Ser Leu Gln Gln Pro
 165 170 175
 Gly Gln Gly Gln Gln Ile Gly Lys Gly Lys Gln Gly Tyr Tyr Pro Thr
 180 185 190
 Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Ile Gly Gln Gly Gln Gln
 195 200 205
 Gly Tyr Tyr Pro Thr Ser Pro Gln His Thr Gly Gln Arg Gln Gln Pro
 210 215 220
 Val Gln Gly Gln Gln Ile Gly Gln Gly Gln Gln Pro Glu Gln Gly Gln
 225 230 235 240
 Gln Pro Gly Gln Trp Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln
 245 250 255
 Leu Gly Gln Gly Gln Gln Pro Gly Gln Trp Gln Gln Ser Gly Gln Gly
 260 265 270
 Gln Gln Gly His Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln Gly Gln
 275 280 285
 Gln Gly His Tyr Leu Ala Ser Gln Gln Gln Pro Ala Gln Gly Gln Gln
 290 295 300
 Gly His Tyr Pro Ala Ser Gln Gln Gln Pro Gly Gln Gly Gln Gln Gly
 305 310 315 320
 His Tyr Pro Ala Ser Gln Gln Gln Pro Gly Gln Gly Gln Gln Gly His
 325 330 335

Tyr Pro Ala Ser Gln Gln Glu Pro Gly Gln Gly Gln Gln Gly Gln Ile
 340 345 350
 Pro Ala Ser Gln Gln Gln Pro Gly Gln Gly Gln Gln Gly His Tyr Pro
 355 360 365
 Ala Ser Leu Gln Gln Pro Gly Gln Gln Gly His Tyr Pro Thr Ser Leu
 370 375 380
 Gln Gln Leu Gly Gln Gly Gln Gln Ile Gly Gln Pro Gly Gln Lys Gln
 385 390 395 400
 Gln Pro Gly Gln Gly Gln Gln Thr Gly Gln Gly Gln Gln Pro Glu Gln
 405 410 415
 Glu Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu
 420 425 430
 Gln Gln Pro Gly Gln Gly Gln Gln Gln Gly Gln Gly Gln Gln Gly Tyr
 435 440 445
 Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Gly His Tyr
 450 455 460
 Pro Ala Ser Leu Gln Gln Pro Gly Gln Gly Gln Gly Gln Pro Gly Gln
 465 470 475 480
 Arg Gln Gln Pro Gly Gln Gly Gln His Pro Glu Gln Gly Gln Gln Pro
 485 490 495
 Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Pro Gly
 500 505 510
 Gln Gly Gln Gln Leu Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser
 515 520 525
 Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly
 530 535 540
 His Cys Pro Met Ser Pro Gln Gln Thr Gly Gln Ala Gln Gln Leu Gly
 545 550 555 560
 Gln Gly Gln Gln Ile Gly Gln Val Gln Gln Pro Gly Gln Gly Gln Gln
 565 570 575
 Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Ser
 580 585 590
 Gly Gln Gly Gln Gln Ser Gly Gln Gly His Gln Pro Gly Gln Gly Gln
 595 600 605
 Gln Ser Gly Gln Glu Lys Gln Gly Tyr Asp Ser Pro Tyr His Val Ser
 610 615 620
 Ala Glu Gln Gln Ala Ala Ser Pro Met Val Ala Lys Ala Gln Gln Pro
 625 630 635 640

Ala Thr Gln Leu Pro Thr Val Cys Arg Met Glu Gly Gly Asp Ala Leu
645 650 655

Ser Ala Ser Gln
660

<210> 7
<211> 648
<212> PRT
<213> Wheat

<400> 7

Met Ala Lys Arg Leu Val Leu Phe Ala Ala Val Val Ile Ala Leu Val
1 5 10 15

Ala Leu Thr Thr Ala Glu Gly Glu Ala Ser Arg Gln Leu Gln Cys Glu
20 25 30

Arg Glu Leu Gln Glu Ser Ser Leu Glu Ala Cys Arg Gln Val Val Asp
35 40 45

Gln Gln Leu Ala Gly Arg Leu Pro Trp Ser Thr Gly Leu Gln Met Arg
50 55 60

Cys Cys Gln Gln Leu Arg Asp Val Ser Ala Lys Cys Arg Ser Val Ala
65 70 75 80

Val Ser Gln Val Ala Arg Gln Tyr Glu Gln Thr Val Val Pro Pro Lys
85 90 95

Gly Gly Ser Phe Tyr Pro Gly Glu Thr Thr Pro Leu Gln Gln Leu Gln
100 105 110

Gln Gly Ile Phe Trp Gly Thr Ser Ser Gln Thr Val Gln Gly Tyr Tyr
115 120 125

Pro Gly Val Thr Ser Pro Arg Gln Gly Ser Tyr Tyr Pro Gly Gln Ala
130 135 140

Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Lys Trp Gln Glu
145 150 155 160

Pro Gly Gln Gly Gln Gln Trp Tyr Tyr Pro Thr Ser Leu Gln Gln Pro
165 170 175

Gly Gln Gly Gln Gln Ile Gly Lys Gly Gln Gln Gly Tyr Tyr Pro Thr
180 185 190

Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser
195 200 205

Leu Gln His Thr Gly Gln Arg Gln Gln Pro Val Gln Gly Gln Gln Pro
210 215 220

Glu Gln Gly Gln Gln Pro Gly Gln Trp Gln Gln Gly Tyr Tyr Pro Thr
 225 230 235 240
 Ser Pro Gln Gln Leu Gly Gln Gly Gln Gln Pro Arg Gln Trp Gln Gln
 245 250 255
 Ser Gly Gln Gly Gln Gln Gly His Tyr Pro Thr Ser Leu Gln Gln Pro
 260 265 270
 Gly Gln Gly Gln Gln Gly His Tyr Leu Ala Ser Gln Gln Gln Pro Gly
 275 280 285
 Gln Gly Gln Gln Gly His Tyr Pro Ala Ser Gln Gln Gln Pro Gly Gln
 290 295 300
 Gly Gln Gln Gly His Tyr Pro Ala Ser Gln Gln Gln Pro Gly Gln Gly
 305 310 315 320
 Gln Gln Gly His Tyr Pro Ala Ser Gln Gln Glu Pro Gly Gln Gly Gln
 325 330 335
 Gln Gly Gln Ile Pro Ala Ser Gln Gln Gln Pro Gly Gln Gly Gln Gln
 340 345 350
 Gly His Tyr Pro Ala Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Gly
 355 360 365
 His Tyr Pro Thr Ser Leu Gln Gln Leu Gly Gln Gly Gln Gln Thr Gly
 370 375 380
 Gln Pro Gly Gln Lys Gln Gln Pro Gly Gln Gly Gln Gln Thr Gly Gln
 385 390 395 400
 Gly Gln Gln Pro Glu Gln Glu Gln Gln Pro Gly Gln Gly Gln Gln Gly
 405 410 415
 Tyr Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Gln Gly
 420 425 430
 Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln
 435 440 445
 Gly Gln Gln Gly His Tyr Pro Ala Ser Leu Gln Gln Pro Gly Gln Gly
 450 455 460
 Gln Pro Gly Gln Arg Gln Gln Pro Gly Gln Gly Gln His Pro Glu Gln
 465 470 475 480
 Gly Lys Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro
 485 490 495
 Gln Gln Pro Gly Gln Gly Gln Gln Leu Gly Gln Gly Gln Gln Gly Tyr
 500 505 510
 Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln
 515 520 525

Gly Gln Gln Gly His Cys Pro Thr Ser Pro Gln Gln Ser Gly Gln Ala
 530 535 540
 Gln Gln Pro Gly Gln Gly Gln Gln Ile Gly Gln Val Gln Gln Pro Gly
 545 550 555 560
 Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Val Gln Gln Pro Gly Gln
 565 570 575
 Gly Gln Gln Ser Gly Gln Gly Gln Gln Ser Gly Gln Gly His Gln Pro
 580 585 590
 Gly Gln Gly Gln Gln Ser Gly Gln Glu Gln Gln Gly Tyr Asp Ser Pro
 595 600 605
 Tyr His Val Ser Ala Glu Gln Gln Ala Ala Ser Pro Met Val Ala Lys
 610 615 620
 Ala Gln Gln Pro Ala Thr Gln Leu Pro Thr Val Cys Arg Met Glu Gly
 625 630 635 640
 Gly Asp Ala Leu Ser Ala Ser Gln
 645

<210> 8
 <211> 705
 <212> PRT
 <213> Wheat

<400> 8

Met Ala Lys Arg Leu Val Leu Phe Ala Thr Val Val Ile Thr Leu Val
 1 5 10 15
 Ala Leu Thr Ala Ala Glu Gly Glu Ala Ser Arg Gln Leu Gln Cys Glu
 20 25 30
 Arg Glu Leu Gln Glu Ser Ser Leu Glu Ala Cys Arg Gln Val Val Asp
 35 40 45
 Gln Gln Leu Ala Gly Arg Leu Pro Trp Ser Thr Gly Leu Gln Met Arg
 50 55 60
 Cys Cys Gln Gln Leu Arg Asp Val Ser Ala Lys Cys Arg Pro Val Ala
 65 70 75 80
 Val Ser Gln Val Val Arg Gln Tyr Glu Gln Thr Val Val Pro Pro Lys
 85 90 95
 Gly Gly Ser Phe Tyr Pro Gly Glu Thr Thr Pro Leu Gln Gln Leu Gln
 100 105 110
 Gln Val Ile Phe Trp Gly Thr Ser Ser Gln Thr Val Gln Gly Tyr Tyr
 115 120 125

Pro Ser Val Ser Ser Pro Gln Gln Gly Pro Tyr Tyr Pro Gly Gln Ala
 130 135 140
 Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Lys Trp Gln Glu
 145 150 155 160
 Leu Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu His Gln Ser
 165 170 175
 Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Ser Ser Leu Gln Gln Pro Gly
 180 185 190
 Gln Gly Gln Gln Ile Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser
 195 200 205
 Leu Gln Gln Pro Gly Gln Gly Gln Gln Ile Gly Gln Gly Gln Gln Gly
 210 215 220
 Tyr Tyr Pro Thr Ser Pro Gln His Pro Gly Gln Arg Gln Gln Pro Gly
 225 230 235 240
 Gln Gly Gln Gln Ile Gly Gln Gly Gln Gln Leu Gly Gln Gly Arg Gln
 245 250 255
 Ile Gly Gln Gly Gln Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro
 260 265 270
 Thr Ser Pro Gln Gln Leu Gly Gln Gly Gln Gln Pro Gly Gln Trp Gln
 275 280 285
 Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Gln Gln Gln
 290 295 300
 Pro Gly Gln Gly Gln Gln Gly Gln Tyr Pro Ala Ser Gln Gln Gln Pro
 305 310 315 320
 Gly Gln Gly Gln Gln Gly Gln Tyr Pro Ala Ser Gln Gln Gln Pro Gly
 325 330 335
 Gln Gly Gln Gln Gly Gln Tyr Pro Ala Ser Gln Gln Gln Pro Gly Gln
 340 345 350
 Gly Gln Gln Gly His Tyr Leu Ala Ser Gln Gln Gln Pro Gly Gln Gly
 355 360 365
 Gln Gln Arg His Tyr Pro Ala Ser Leu Gln Gln Pro Gly Gln Gly Gln
 370 375 380
 Gln Gly His Tyr Thr Ala Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln
 385 390 395 400
 Gly His Tyr Pro Ala Ser Leu Gln Gln Val Gly Gln Gly Gln Gln Ile
 405 410 415
 Gly Gln Leu Gly Gln Arg Gln Gln Pro Gly Gln Gly Gln Gln Thr Arg
 420 425 430

Gln Gly Gln Gln Leu Glu Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln
 435 440 445
 Thr Arg Gln Gly Gln Gln Leu Glu Gln Gly Gln Gln Pro Gly Gln Gly
 450 455 460
 Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln
 465 470 475 480
 Gln Pro Gly Gln Ser Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr
 485 490 495
 Ser Ser Ser Leu Gln Gln Pro Gly Gln Gly Leu Gln Gly His Tyr Pro
 500 505 510
 Ala Ser Leu Gln Gln Pro Gly Gln Gly His Pro Gly Gln Arg Gln Gln
 515 520 525
 Pro Gly Gln Gly Gln Gln Pro Glu Gln Gly Gln Gln Pro Gly Gln Gly
 530 535 540
 Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln Gly Lys
 545 550 555 560
 Gln Leu Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln
 565 570 575
 Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly His Cys Pro
 580 585 590
 Thr Ser Pro Gln Gln Thr Gly Gln Ala Gln Gln Pro Gly Gln Gly Gln
 595 600 605
 Gln Ile Gly Gln Val Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr
 610 615 620
 Pro Ile Ser Leu Gln Gln Ser Gly Gln Gly Gln Gln Ser Gly Gln Gly
 625 630 635 640
 Gln Gln Ser Gly Gln Gly His Gln Leu Gly Gln Gly Gln Gln Ser Gly
 645 650 655
 Gln Glu Gln Gln Gly Tyr Asp Asn Pro Tyr His Val Asn Thr Glu Gln
 660 665 670
 Gln Thr Ala Ser Pro Lys Val Ala Lys Val Gln Gln Pro Ala Thr Gln
 675 680 685
 Leu Pro Ile Met Cys Arg Met Glu Gly Gly Asp Ala Leu Ser Ala Ser
 690 695 700
 Gln
 705

<210> 9
 <211> 602

<212> PRT
 <213> Wheat

<400> 9

Met	Ala	Lys	Arg	Leu	Val	Leu	Phe	Ala	Thr	Val	Val	Ile	Gly	Leu	Val	1	5	10	15
Ser	Leu	Thr	Val	Ala	Glu	Gly	Glu	Ala	Ser	Lys	Gln	Leu	Gln	Cys	Glu	20	25	30	
Arg	Glu	Leu	Gln	Glu	Ser	Ser	Leu	Glu	Ala	Cys	Arg	Leu	Val	Val	Asp	35	40	45	
Gln	Gln	Leu	Ala	Ser	Arg	Leu	Pro	Trp	Ser	Thr	Gly	Leu	Gln	Met	Arg	50	55	60	
Cys	Cys	Gln	Gln	Leu	Arg	Asp	Ile	Ser	Ala	Lys	Cys	Arg	Pro	Val	Ala	65	70	75	80
Leu	Ser	Gln	Val	Ala	Arg	Gln	Tyr	Gly	Gln	Thr	Ala	Val	Pro	Pro	Lys	85	90	95	
Gly	Gly	Pro	Phe	Tyr	His	Arg	Glu	Thr	Thr	Pro	Leu	Gln	Gln	Leu	Gln	100	105	110	
Gln	Gly	Ile	Phe	Gly	Gly	Thr	Ser	Ser	Gln	Thr	Val	Gln	Gly	Tyr	Tyr	115	120	125	
Pro	Ser	Val	Ile	Ser	Pro	Gln	Gln	Gly	Ser	Tyr	Tyr	Pro	Gly	Gln	Ala	130	135	140	
Ser	Pro	Gln	Gln	Pro	Gly	Lys	Trp	Gln	Glu	Leu	Gly	Gln	Gly	Gln	Gln	145	150	155	160
Trp	Tyr	Tyr	Pro	Thr	Ser	Leu	Gln	Gln	Pro	Gly	Gln	Gly	Gln	Gln	Gly	165	170	175	
Tyr	Tyr	Arg	Thr	Ser	Leu	Gln	Gln	Pro	Gly	Gln	Arg	Gln	Gln	Gly	Tyr	180	185	190	
Tyr	Arg	Thr	Ser	Leu	Gln	Gln	Pro	Gly	Gln	Gly	Gln	Gln	Ile	Gly	Gln	195	200	205	
Trp	Gln	Gln	Gly	Tyr	Tyr	Pro	Thr	Ser	Pro	Gln	His	Pro	Gly	Gln	Gly	210	215	220	
Gln	Gln	Pro	Gly	Gln	Val	Gln	Lys	Ile	Gly	Gln	Gly	Gln	Gln	Pro	Glu	225	230	235	240
Lys	Gly	Gln	Gln	Leu	Gly	Gln	Glu	Gln	Gln	Ile	Gly	Gln	Gly	Gln	Gln	245	250	255	
Pro	Glu	Gln	Gly	Gln	Gln	Pro	Gly	Gln	Gly	Gln	Gln	Pro	Gly	Gln	Gly	260	265	270	

Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln Gly Gln
 275 280 285
 Gln Pro Gly Gln Trp Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr
 290 295 300
 Pro Thr Ser Leu Gln Gln Pro Val Gln Gly Gln Gln Gly His Tyr Pro
 305 310 315 320
 Ala Ser Gln His Gln Pro Gly Gln Gly Gln Gln Gly His Gln Pro Ala
 325 330 335
 Ser Leu Gln Leu Ser Gly Gln Gly Gln Gln Gly His His Pro Ala Ser
 340 345 350
 Leu Gln Gln Pro Gly Gln Gly Lys Gln Thr Gly Gln Arg Glu Gln Arg
 355 360 365
 Gln Gln Pro Gly Gln Gly Gln Gln Thr Gly Gln Gly Gln Gln Pro Glu
 370 375 380
 Gln Glu Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Tyr
 385 390 395 400
 Leu Gln Gln Pro Gly Gln Gly Gln Gln Pro Glu Gln Trp Gln Gln Pro
 405 410 415
 Gly Gln Gly Gln Gln Gly His Tyr Pro Ala Ser Leu Gln Gln Ser Gly
 420 425 430
 Gln Gly Gln Gln Gly His Tyr Pro Ala Ser Leu Gln Gln Leu Gly Gln
 435 440 445
 Gly Gln Pro Gly Gln Thr Gln Gln Pro Gly Gln Gly Gln Gln Pro Glu
 450 455 460
 Gln Glu Glu Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser
 465 470 475 480
 Pro Gln Gln Pro Gly Gln Gly Gln Gln Gly His Phe Pro Thr Ser Gly
 485 490 495
 Gln Ala Gln Gln Pro Gly Gln Gly Gln Gln Ile Gly Gln Ala Gln Gln
 500 505 510
 Leu Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Pro
 515 520 525
 Gly Gln Glu Gln Gln Ser Gly Gln Gly Gln Gln Leu Gly Gln Gly His
 530 535 540
 Gln Pro Gly Gln Gly Gln Gln Ser Gly Gln Glu Gln Gln Gly Tyr Asp
 545 550 555 560
 Ser Pro Tyr His Val Ser Val Glu Gln Gln Ala Ala Ser Pro Lys Val
 565 570 575

Ala Lys Ala His His Pro Val Ala Gln Leu Pro Thr Met Cys Gln Met
580 585 590

Glu Gly Gly Asp Ala Leu Ser Ala Ser Gln
595 600

<210> 10

<211> 621

<212> PRT

<213> Artificial Sequence

<220>

<223> Consensus sequence derived from wheat sequences of Table 1

<400> 10

Met Ala Lys Arg Leu Val Leu Phe Ala Ala Val Val Val Ala Leu Val
1 5 10 15

Ala Leu Thr Ala Glu Gly Glu Ala Ser Gln Leu Gln Cys Glu Arg Glu
20 25 30

Leu Gln Glu Ser Leu Ala Cys Arg Gln Val Val Asp Gln Gln Leu Arg
35 40 45

Asp Val Ser Pro Cys Arg Pro Val Val Ser Pro Val Ala Arg Gln Tyr
50 55 60

Glu Gln Gln Val Val Pro Pro Lys Gly Gly Ser Phe Tyr Pro Gly Glu
65 70 75 80

Thr Thr Pro Gln Gln Leu Gln Gln Ile Phe Trp Gly Ile Pro Ala Leu
85 90 95

Leu Arg Tyr Tyr Pro Ser Val Thr Ser Pro Gln Gln Gly Ser Tyr Tyr
100 105 110

Pro Gly Gln Ala Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly
115 120 125

Gln Gly Gln Gln Gly Tyr Tyr Thr Ser Pro Gln Gln Pro Gly Gln Gln
130 135 140

Gln Gly Gln Gly Gln Gly Tyr Tyr Pro Thr Ser Gln Gln Pro Gly Gln
145 150 155 160

Gln Gln Gln Gly Gln Gln Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr
165 170 175

Ser Gln Pro Gly Gln Gln Gln Pro Gln Gly Gln Gln Gln Gln Gly
180 185 190

Gln Gln Gly Gln Gly Gln Gln Gly Gln Gly Gln Gln Gly Gln Gln Pro
195 200 205

Gly Gln Gln Gln Gly Gln Gly Gln Gln Gly Gln Gln Pro Gln Gln Ser
 210 215 220
 Gly Gln Gly Gln Gly Tyr Tyr Pro Thr Ser Gln Gln Pro Gly Gln Gly
 225 230 235 240
 Gln Gln Gln Gln Gln Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln
 245 250 255
 Gly Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly
 260 265 270
 Tyr Tyr Pro Thr Ser Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Pro
 275 280 285
 Ser Gln Gln Pro Gly Gln Gln Pro Gln Gln Gly Gln Gln Gln Pro Gln
 290 295 300
 Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro
 305 310 315 320
 Gln Gln Ser Gly Gln Gly Gln Gly Tyr Tyr Thr Ser Pro Gln Gln Ser
 325 330 335
 Gly Gln Gln Gln Pro Gln Gln Gln Gly Gln Gln Gly Gln Gln Pro Gly
 340 345 350
 Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Pro Gly Gln Gly
 355 360 365
 Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gln Gln Pro
 370 375 380
 Gly Gln Trp Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr
 385 390 395 400
 Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser
 405 410 415
 Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gln Gln Gln Pro Gln Gly
 420 425 430
 Gln Gln Gln Gln Gln Gln Gln Gln Pro Gln Gly Gln Gln Pro Gly Gln
 435 440 445
 Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro
 450 455 460
 Gln Gln Ser Gly Gln Gly Gln Gln Gly Gln Gly Tyr Tyr Thr Gly Gln
 465 470 475 480
 Gln Gly Tyr Tyr Pro Thr Ser Gln Gln Pro Gly Gln Gly Gln Gln Pro
 485 490 495
 Gly Gln Gln Gln Gln Gly Gln Tyr Tyr Pro Ser Pro Ser Gly Gln Gly
 500 505 510

Gln Pro Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Gly Gln
 515 520 525
 Gly Gln Gln Pro Gly Gln Gln Gly Gln Trp Leu Gln Pro Gly Gln Gly
 530 535 540
 Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Gly Gln Gly Gln Gln
 545 550 555 560
 Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Gln Gln Ser Gly Gln Gln
 565 570 575
 Gln Gly Tyr Asp Ser Pro Tyr His Val Ser Ala Glu Gln Ala Ala Ser
 580 585 590
 Leu Lys Val Ala Lys Ala Gln Gln Leu Ala Ala Gln Leu Pro Ala Met
 595 600 605
 Cys Arg Leu Glu Gly Gly Asp Ala Leu Ser Ala Ser Gln
 610 615 620

<210> 11
 <211> 18
 <212> PRT
 <213> Wheat

<400> 11

Leu Lys Val Ala Lys Ala Gln Gln Leu Ala Ala Gln Leu Pro Ala Met
 1 5 10 15

Cys Arg

<210> 12
 <211> 2073
 <212> DNA
 <213> Guinea pig

<220>
 <221> CDS
 <222> (1)..(2073)
 <223> transglutaminase enzyme

<400> 12

atg gca gag gat ctg atc ctg gag aga tgt gat ttg cag ctg gag gtc 48
 aat ggc cgc gac cac cgc acg gcc gac ctg tgc cgg gag agg ctg gtg 96
 ttg cgg cgg ggc cag ccc ttc tgg ctg acg ctg cac ttt gag ggc cgt 144
 ggc tac gag gct ggt gtg gac act ctc acc ttc aac gct gtg acc ggc 192

cca gat ccc agt gag gag gcc ggg act atg gcc cgg ttc tca ctg tcc	240
agt gct gtc gag ggg ggc acc tgg tca gcc tca gca gtg gac cag cag	288
gac agc act gtc tcg ctg ctg ctc agc acc cca gct gat gcc ccc att	336
ggc ctg tat cgc ctc agc ctg gag gcc tcc act ggt tac cag ggc tcc	384
agc ttc gta ctg ggc cac ttc atc ctg ctc tac aat cct cgg tgc cca	432
gcg gat gct gtc tat atg gac tca gac caa gag cgg cag gag tat gtg	480
ctc acc caa cag ggc ttc atc tac cag ggc tcg gcc aag ttc atc aat	528
ggc ata cct tgg aac ttc ggg cag ttt gaa gat ggg atc ctg gat att	576
tgc ctg atg ctc ttg gac acc aac ccc aag ttc ctg aag aat gct ggc	624
caa gac tgc tcg cgc cgc agc aga cct gtc tac gtg ggc cgg gtg gtg	672
agc gcc atg gtc aac tgc aat gac gat cag ggc gtg ctt cag gga cgc	720
tgg gac aac aac tac agt gat ggt gtc agc ccc atg tcc tgg atc ggc	768
agc gtg gac atc ctg cgg cgc tgg aaa gac tat ggg tgc cag cgc gtc	816
aag tac ggc cag tgc tgg gtc ttc gct gct gtg gcc tgc aca gtg ctg	864
cgg tgc ctt ggc atc ccc acc cga gtc gtg acc aac ttt aac tca gcc	912
cac gac cag aac agc aac ctg ctc atc gag tac ttc cga aac gag tct	960
ggg gag atc gag ggg aac aag agc gag atg atc tgg aac ttc cac tgc	1008
tgg gtg gag tcg tgg atg acc agg ccg gac ctg gag cct ggg tac gag	1056
ggg tgg cag gcc ctg gac ccc aca ccc cag gag aag agt gaa ggg aca	1104

tac tgc tgt ggc cca gtt ccg gtt cga gcc atc aag gag ggc cac ctg	1152
aac gtc aag tat gat gca cct ttc gtg ttt gct gag gtc aat gct gac	1200
gtg gtg aac tgg atc cgg cag aaa gat ggg tcc ctg cgc aag tcc atc	1248
aac cat ttg gtt gtg ggg ctg aag atc agt act aag agt gtg ggc cgc	1296
gat gag cga gag gac atc acc cac acc tac aag tac cca gag gga tct	1344
gaa gag gag cgg gaa gct ttt gtt agg gcc aac cac cta aat aaa ctg	1392
gcc aca aag gaa gag gct cag gag gaa acg gga gtg gcc atg cgg atc	1440
cgt gtg ggc cag aac atg act atg ggc agt gac ttt gac atc ttt gcc	1488
tac atc acc aat ggc act gct gag agc cac gaa tgc caa ctc ctg ctc	1536
tgt gca cgc atc gtc agc tac aat gga gtc ctg ggg ccc gtg tgc agc	1584
acc aac gac ctg ctc aac ctg acc ctg gat ccc ttc tcg gag aac agc	1632
atc ccc ctg cac atc ctc tat gag aag tac ggt gac tac ctg act gag	1680
tcc aac ctc atc aag gtg cga ggc ctc ctt atc gag cca gca gcc aac	1728
agc tat gta ttg gcc gag agg gac att tac ctg gag aat cca gaa atc	1776
aag atc cgg gtc ttg ggg gag ccc aag cag aac cgc aag ctg att gct	1824
gag gtg tct ctg aag aat ccg ctc cct gtg ccg ctg ctg ggt tgt atc	1872
ttc acc gtg gaa gga gct ggc ctg acc aag gac cag aag tcg gtg gag	1920
gtc cca gac ccc gtg gaa gca ggg gag caa gcg aag gta cgg gtg gac	1968
ctg ctg ccg acg gag gtg ggc ctc cac aag ctg gtg gtg aac ttc gag	2016

tgc gac aag ctg aag gcc gtg aag ggc tat cgg aac gtc atc atc ggc 2064

ccc gcc taa 2073

<210> 13
<211> 736
<212> DNA
<213> Rice

<400> 13

gaattccttc tacatcggt taggtgtagc aacacgactt tattattatt attattatta 60
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ggtagagttat tgtaaagttc tacaagcta atttaaaagt tattgcatta acttatttca 180
tattacaaac aagagtgtca atggaacaat gaaaaccata tgacatacta taattttgtt 240
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tgtggtgcat taccaaaata tatatagctt acaaaacatg acaagcttag ttgaaaaat 360
tgcaatcctt atcacattga cacataaagt gagtgatgag tcataatatt attttctttg 420
ctacccatca tgtatatatg atagccacaa agttactttg atgatgatat caaagaacat 480
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aatgaaaatc ctcatcatcc ttcaccacaa ttcaaattat atagttgaag catagtagta 660
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tgctctgcg tctaga 736

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<223> PLT237 forward primer for amplification of guinea pig gene
transglutaminase

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30

<210> 35

<211> 28

<212> DNA

<213> Artificial Sequence

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<223> PLT238 reverse primer for amplification of guinea pig gene
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<400> 35

gagctcttag gcggggccga tgatgacg

28

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<211> 9

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Pro Phe Pro Gln Pro Gln Leu Pro Tyr
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<400> 37

Pro Gln Pro Gln Leu Pro Tyr Pro Gln
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<210> 38
<211> 9
<212> PRT
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<220>
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<400> 38

Pro Tyr Pro Gln Pro Gln Leu Pro Tyr
1 5

<210> 39
<211> 13
<212> PRT
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<220>
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<400> 39

Leu Gln Leu Gln Pro Phe Pro Gln Pro Gln Leu Pro Tyr
1 5 10

<210> 40
<211> 13
<212> PRT
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<220>
<223> Sequence derived from wheat storage proteins wherein the allergenic amino acid is eliminated (Tyr and Ser at positions 5 and 8 may be

mutated)

<400> 40

Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly
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<210> 41
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<400> 41

Gln Gln Gly Tyr Tyr Pro Thr Ser
1 5

<210> 42
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<212> PRT
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<400> 42

Pro Phe Ser Gln Gln Gln Gln Gln
1 5

<210> 43
<211> 12
<212> PRT
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<220>
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<400> 43

Gln Ser Glu Gln Ser Gln Gln Pro Phe Gln Pro Gln
1 5 10

<210> 44
<211> 9

<212> PRT
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 <220>
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 <221> misc_feature
 <222> (2)..(2)
 <223> Xaa can be any naturally occurring amino acid

 <400> 44

Gln Xaa Pro Gln Gln Pro Gln Gln Phe
 1 5